

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Previously Presented): A method of MR imaging for visualization of intravascular thrombi comprising administering to a subject who is to undergo MR imaging for determination of the presence of intravascular thrombi, as contrast media for visualization, perfluoroalkyl-containing metal complexes that have a critical micelle formation concentration  $< 10^{-3}$  mol/l, a hydrodynamic micelle diameter ( $2 R_h$ )  $> 1$  nm and a proton relaxivity in plasma ( $R^1$ )  $> 10$  l/mmol's, and visualizing intravascular thrombi in said subject with an MR imaging apparatus.

Claim 2 (Previously Presented): A method according to claim 1, wherein venous thrombi is visualized.

Claim 3 (Previously Presented): A method according to claim 1, wherein arterial thrombi is visualized.

Claim 4 (Previously Presented): A method according to claim 1, wherein early determination of a thrombotic occlusive vascular disease is achieved by said visualization.

Claim 5 (Previously Presented): A method according to claim 1, wherein the metal complexes have a micelle formation concentration of  $< 10^{-4}$  mol/l.

Claim 6 (Previously Presented): A method according to claim 1, wherein the metal complexes have a hydrodynamic micelle diameter is  $\geq 3$  nm.

Claim 7 (Previously Presented): A method according to claim 1, wherein the metal complexes have a proton relaxivity in plasma of  $> 13$  l/mmol's.

Claim 8 (Currently Amended): A method according to claim 1, wherein the perfluoroalkyl-containing metal complexes are of formula I

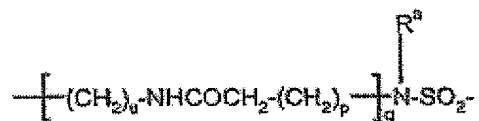


in which

$R^F$  is a perfluorinated, straight-chain or branched carbon chain with formula  $-C_nF_{2n}E$ ,  
in which

E represents a terminal fluorine, chlorine, bromine, iodine or hydrogen atom  
and n stands for numbers 4-30,

L means a direct bond, a methylene group, an -NHCO group, a group



wherein p means the numbers 0 to 10, and q and u  $[[n]]$ , independently of one another, mean numbers 0 or 1, and

$R^a$  is a hydrogen atom, a methyl group, a benzyl group, a phenyl group, a  $-CH_2-OH$  group, a  $CH_2OCH_3$  group, a  $-CH_2-CO_2H$  group or a  $C_2-C_{15}$  chain, which optionally is interrupted by 1 to 3 oxygen atoms, 1 to 2  $>CO$  groups or an optionally substituted aryl group and/or is substituted with 1 to 4 hydroxyl groups, 1 to 2  $C_1-C_4$  alkoxy groups, 1 to 2 carboxy groups, a group  $-SO_3H-$ ,

or is a straight-chain, branched, saturated or unsaturated  $C_2-C_{30}$  carbon chain, which optionally contains 1 to 10 oxygen atoms, 1 to 3  $-NR^a$  groups, 1 to 2 sulfur atoms, a piperazine, a  $-CONR^a$  group, one to six  $-NR^aCO$  groups, an  $-SO_2$  group, an  $-NR^a-CO_2$  group, 1 to 2 CO groups, a group  $-CO-N-T-N(R^a)-SO_2-R^F$

$$\text{---CO---N---T---N(R}^a\text{)---SO}_2\text{---R}^F$$

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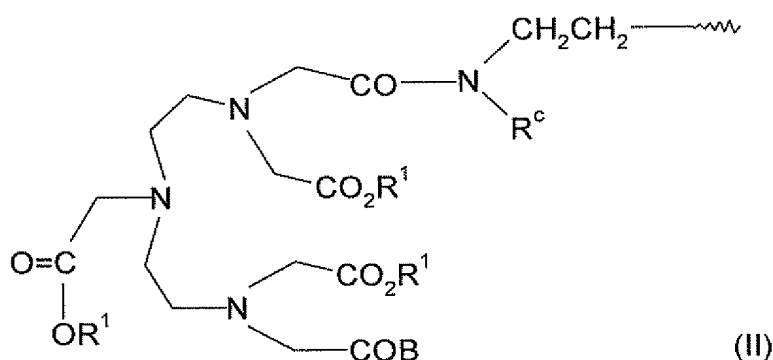
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or 1 to 2 optionally substituted aryls and/or is interrupted by these groups and/or is optionally substituted with 1 to 3 -OR<sup>a</sup> groups, 1 to 2 oxo groups, 1 to 2 -NH-COR<sup>a</sup> groups, 1 to 2 -CONHR<sup>a</sup> groups, 1 to 2 -(CH<sub>2</sub>)<sub>p</sub>-CO<sub>2</sub>H groups, 1 to 2 groups -(CH<sub>2</sub>)<sub>p</sub>-(O)<sub>q</sub>-CH<sub>2</sub>CH<sub>2</sub>-R<sup>F</sup>, wherein

R<sup>a</sup>, R<sup>F</sup> and p and q have the above-indicated meanings, and

T means a C<sub>2</sub>-C<sub>10</sub> chain, which optionally is interrupted by 1 to 2 oxygen atoms or 1 to 2 -NHCO groups,

K stands for a complexing agent or metal complex or a salt thereof with an organic and/or inorganic base or amino acid or amino acid amide, specifically for a complexing agent or complex of general formula II

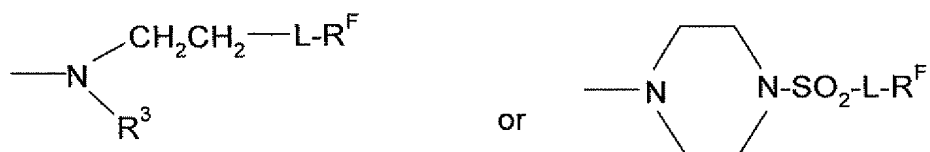


in which R<sup>c</sup>, R<sup>1</sup> and B are independent of one another, and

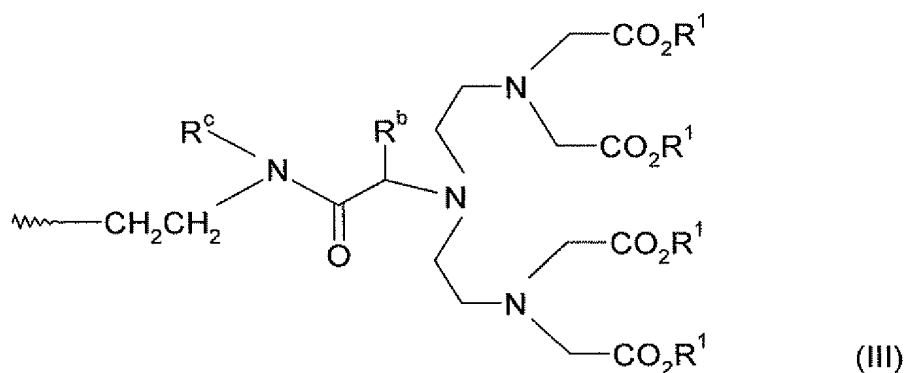
R<sup>c</sup> has the meaning of R<sup>a</sup> or means -(CH<sub>2</sub>)<sub>m</sub>-L-R<sup>F</sup>, wherein m is 0, 1 or 2, and L and R<sup>F</sup> have the above-mentioned meaning,

R<sup>1</sup>, independently of one another, mean a hydrogen atom or a metal ion equivalent of atomic numbers 22-29, 42-46 or 58-70,

B means -OR<sup>1</sup> or



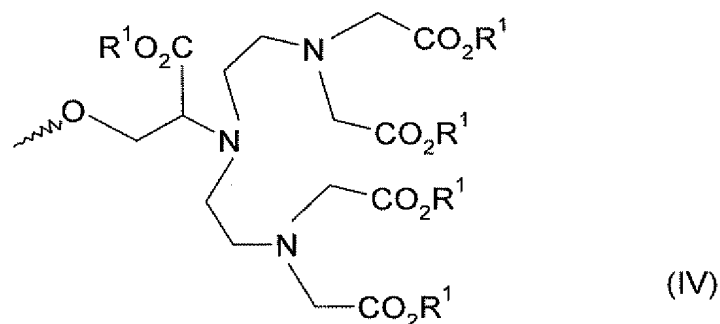
wherein  $\text{R}^1$ , L,  $\text{R}^{\text{F}}$  and  $\text{R}^{\text{c}}$  have the above-mentioned meanings, or  
 K stands for a complexing agent or complex of general formula III



in which  $\text{R}^{\text{c}}$  and  $\text{R}^1$  have the above-mentioned meanings,  
 $\text{R}^{\text{b}}$  has the meaning of  $\text{R}^{\text{a}}$ , and

or

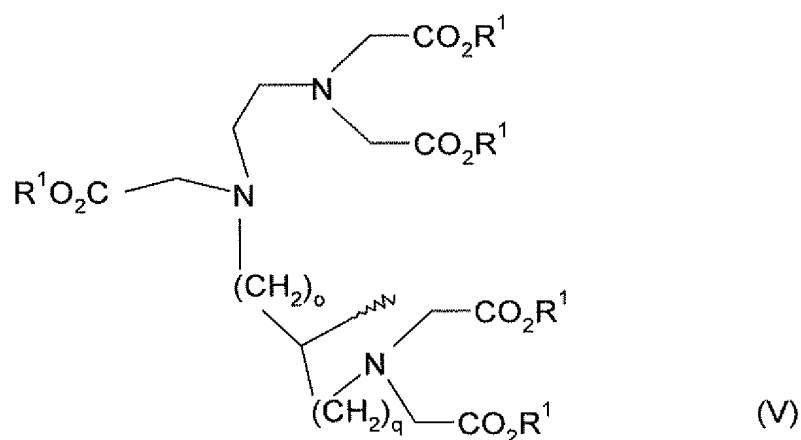
K stands for a complexing agent or complex of general formula IV



in which  $\text{R}^1$  has the above-mentioned meaning

or

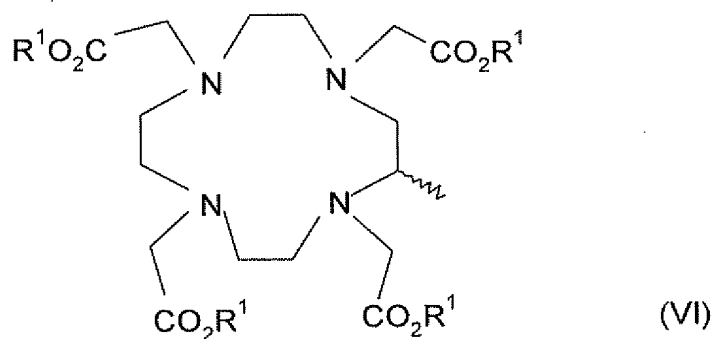
K stands for a complexing agent or complex of general formula V



in which  $R^1$  has the above-mentioned meaning, and  $o$  and  $q$  stand for numbers 0 or 1, and yields the sum  $o + q = 1$ ,

or

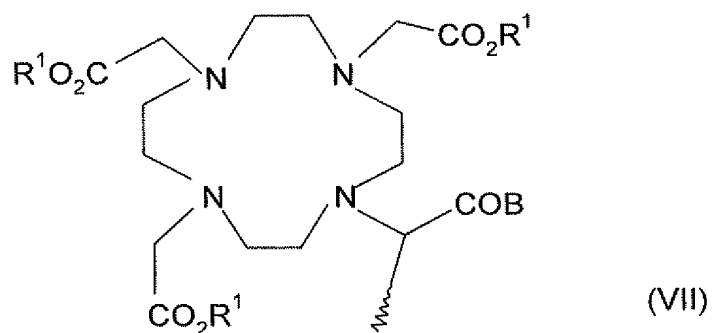
K stands for a complexing agent or complex of general formula VI



in which  $R^1$  has the above-mentioned meaning

or

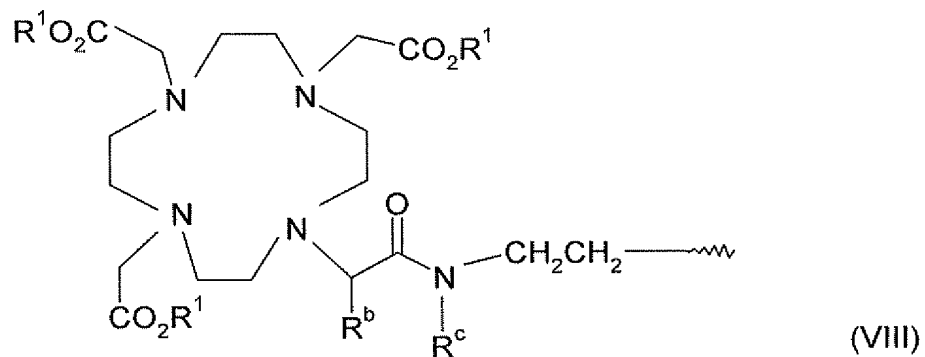
K stands for a complexing agent or complex of general formula VII



in which  $R^1$  and B have the above-mentioned meanings

or

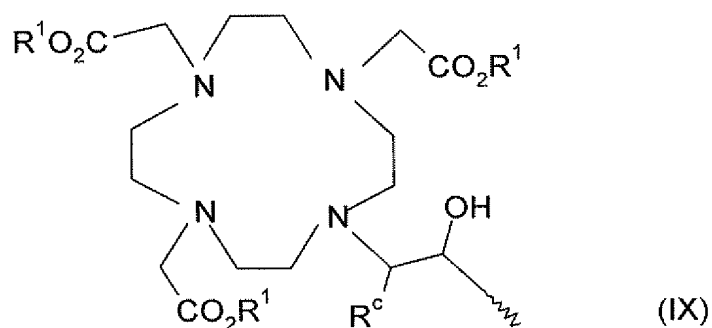
K stands for a complexing agent or complex of general formula VIII



in which  $R^c$ , and  $R^1$  have the above-mentioned meanings, and  $R^b$  has the above-mentioned meaning of  $R^a$

or

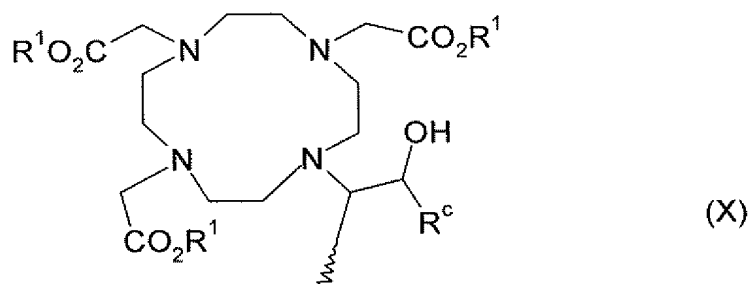
K stands for a complexing agent or complex of general formula IX



in which  $R^c$  and  $R^1$  have the above-mentioned meanings,

or

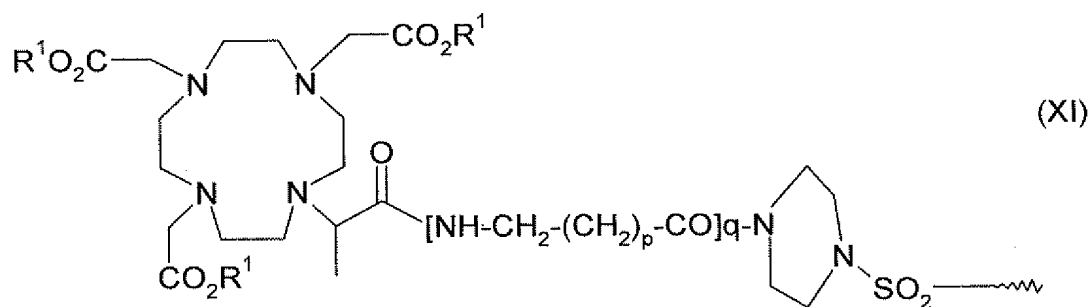
K stands for a complexing agent or complex of general formula X



in which  $R^c$  and  $R^1$  have the above-mentioned meanings,

or

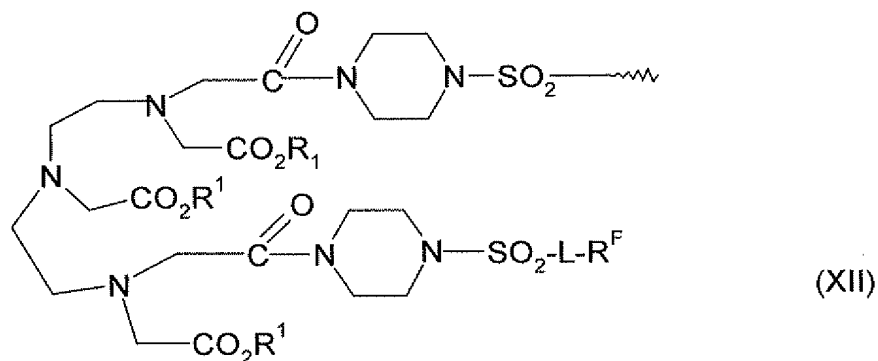
K stands for a complexing agent or complex of general formula XI



in which  $R^1$ ,  $p$  and  $q$  have the above-mentioned meanings, and  $R^b$  has the meaning of  $R^a$ ,

or

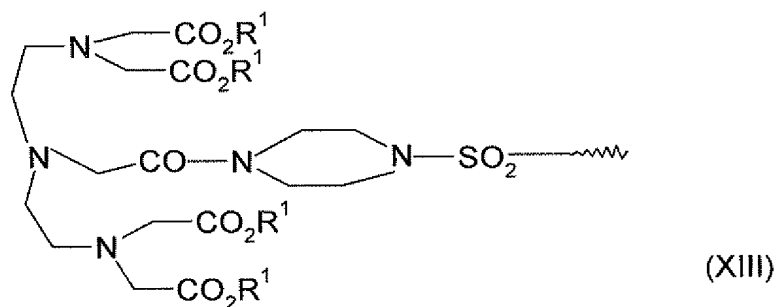
K stands for a complexing agent or complex of general formula XII



in which L,  $R^F$  and  $Z^1$  have the above-mentioned meanings,

or

K stands for a complexing agent or complex of general formula XIII



in which  $R^1$  has the above-mentioned meaning.

Claim 9 (Currently Amended): A method according to claim 8, wherein in the compounds of general formula I, L stands for one of the following



$\alpha\text{-CH}_2\text{-}\beta$

$\alpha\text{-CH}_2\text{CH}_2\text{-}\beta$

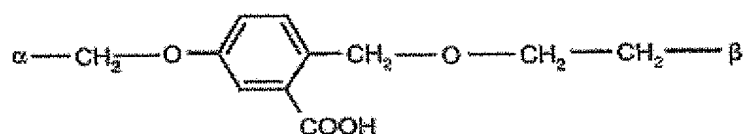
$\alpha\text{-(CH}_2)_s\text{-}\beta$      $s = 3 - 15$

$\alpha\text{-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$

$\alpha\text{-CH}_2\text{-(O-CH}_2\text{-CH}_2\text{)}_t\text{-}\beta$              $t = 2 - 6$

$\alpha\text{-CH}_2\text{-NH-CO-}\beta$

$\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(CH}_2\text{COOH)-SO}_2\text{-}\beta$

$$\alpha - \text{CH}_2 - \text{O} - \text{C}_6\text{H}_3(\text{COOH}) - \text{CH}_3 - \text{O} - \text{CH}_2 - \text{CH}_2 - \beta$$


$\alpha\text{-CH}_2\text{NHCOCH}_2\text{N}(\text{C}_6\text{H}_5)\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NHCO-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-NHCO-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N}(\text{CH}_2\text{COOH})\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N}(\text{C}_2\text{H}_5)\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N}(\text{C}_{10}\text{H}_{21})\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N}(\text{C}_6\text{H}_{13})\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-(CH}_2\text{)}_{10}\text{-N}(\text{C}_2\text{H}_5)\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-C}_6\text{H}_5)\text{-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-CH}_2\text{-OH)}\text{SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-}\beta$

$\alpha\text{-CH}_2\text{-O-C}_6\text{H}_4\text{-O-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-C}_6\text{H}_4\text{-O-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_{10}\text{H}_{21}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_6\text{H}_{13}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_2\text{H}_4\text{OH)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(CH}_2\text{COOH)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(CH}_2\text{C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N-[CH(CH}_2\text{OH)}_2\text{]-SO}_2\text{-}\beta$   
 $\alpha\text{-N-[CH(CH}_2\text{OH)CH(CH}_2\text{OH)]-SO}_2\text{-}\beta$

or

in which  $\alpha$  represents the binding site to the complexing agent or metal complex K, and  $\beta$  represents the binding site to the fluorine radical.

Claim 10 (Previously Presented): A method according to claim 8, wherein in the compounds of formula I, n in formula  $\text{-C}_n\text{F}_{2n}\text{E}$  stands for numbers 4-15 and/or E in this formula means a fluorine atom.

Claim 11 (Currently Amended): A method according to claim 8, wherein one of the following complexes are administered

- Gadolinium complex of 10-[1-methyl-2-oxo-3-aza-5-oxo-{4-perfluorooctylsulfonyl-piperazin-1-yl}-pentyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-aza-5-oxo-7-oxa-10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17-heptafluoroheptadecyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-aza-5,9-dioxo-9-{4-perfluorooctyl}-piperazin-1-yl]-nonyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-aza-5-oxo-7-aza-7-(perfluorooctyl-

- sulfonyl)-nonyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-oxa-1H,1H,2H,3H,3H,5H,5H,6H,6H-perfluorotetradecyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-aza-5-oxo-7-oxa-10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19-henicosafluorononadecyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane,
- Gadolinium complex of 10-[2-hydroxy-4-aza-5-oxo-11-aza-11-(perfluorooctylsulfonyl)-tridecyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraazacyclododecane, or
- Gadolinium complex of 10-[2-hydroxy-4-aza-5-oxo-7-aza-7-(perfluorooctylsulfonyl)-8-phenyl-octyl]-1,4,7-tris(carboxymethyl)-1,4,7,10-tetraaza-cyclododecane.

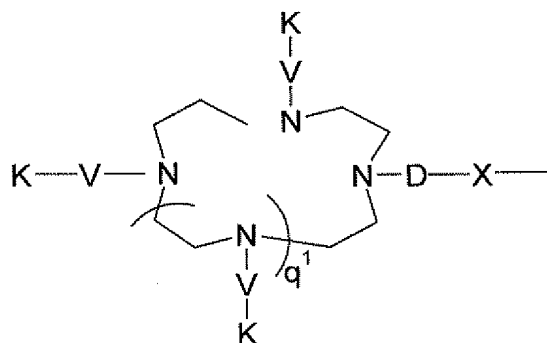
Claim 12 (Previously Presented): A method according to claim 1, wherein the perfluoroalkyl-containing metal complexes are of formula Ia



in which

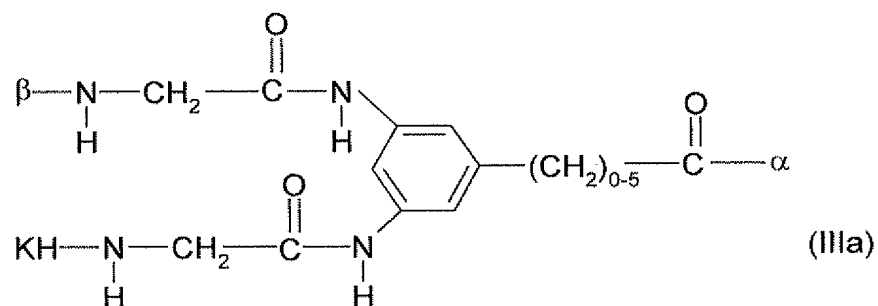
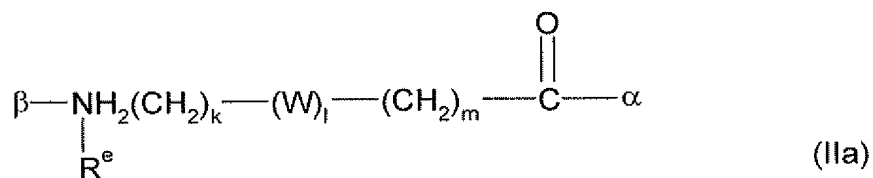
- A is a molecule part that contains 2 to 6 metal complexes, which are bonded directly or via a linker to a nitrogen atom of an annular skeleton chain, and
- $R^F$  is a perfluorinated, straight-chain or branched carbon chain with formula  $-C_nF_{2n}E$ , in which  
E represents a terminal fluorine, chlorine, bromine, iodine or hydrogen atom, and n stands for numbers 4-30,

wherein molecule part A has the following structure:



wherein

- $q^1$  is a number 0, 1, 2 or 3,
- K stands for a complexing agent or metal complex or a salt thereof with an organic and/or inorganic base or amino acid or amino acid amide,
- X is a direct bond to the perfluoroalkyl group, a phenylene group or a  $C_1$ - $C_{10}$ -alkylene chain, which optionally contains 1-15 oxygen atoms, 1-5 sulfur atoms, 1-10 carbonyl groups, 10-10 ( $NR^d$ ) groups, 1-2  $NR^dSO_2$  groups, 1-10  $CONR^d$  groups, 1 piperidine group, 1-3  $SO_2$  groups and 1-2 phenylene groups or optionally is substituted by 1-3 radicals  $R^F$ , in which  $R^d$  stands for a hydrogen atom, a phenyl group, benzyl group or a  $C_1$ - $C_{15}$  alkyl group, which optionally contains 1-2  $NHCO$  groups, 1-2  $CO$  groups, or 1-5 oxygen atoms and optionally is substituted by 1-5 hydroxy, 1-5 methoxy, 1-3 carboxy, or 1-3  $R^F$  radicals,
- V is a direct bond or a chain of general formula IIa or IIIa:



in which

$R^e$  is a hydrogen atom, a phenyl group, a benzyl group or a  $\text{C}_1$ - $\text{C}_7$ -alkyl group, which optionally is substituted with a carboxy group, a methoxy group or a hydroxy group,

W is a direct bond, a polyglycol ether group with up to 5 glycol units, or a molecule part of general formula IVa



in which  $\text{R}^h$  is a  $\text{C}_1$ - $\text{C}_7$  carboxylic acid, a phenyl group, a benzyl group or a  $(\text{CH}_2)_{1-5}$ -NH-K group,

$\alpha$  represents the binding to the nitrogen atom of the skeleton chain,  $\beta$  represents the binding to complexing agents or metal complex K,

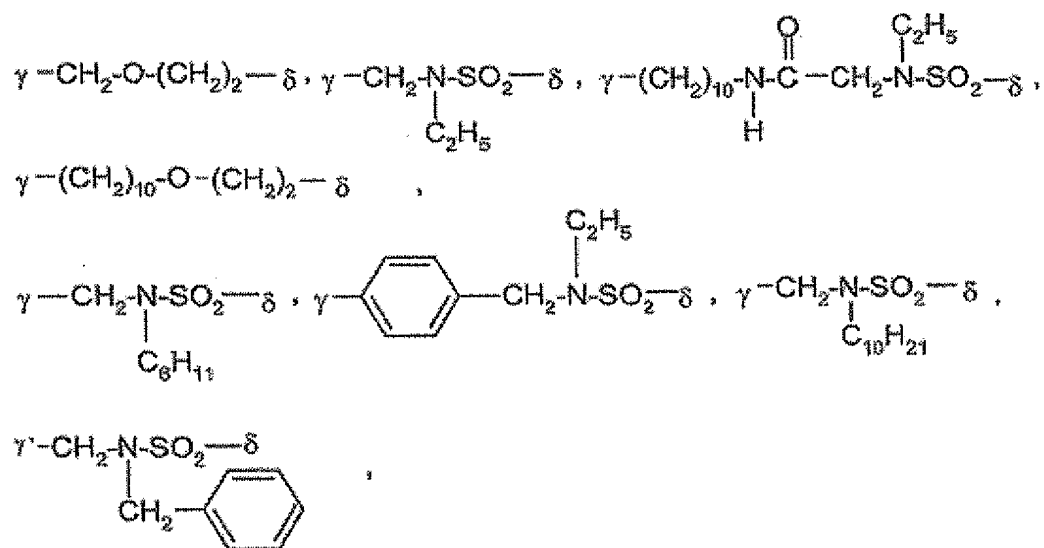
and in which variables k and m stand for natural numbers between 0 and 10, and l stands for 0 or 1

and wherein

D is a CO or  $\text{SO}_2$  group.

Claim 13 (Previously Presented): A method according to claim 12, wherein in the compounds of general formula Ia, q is the number 1.

Claim 14 (Currently Amended): A method according to claim 12, wherein in the compounds of general formula Ia, molecule part X is an alkylene chain, which contains 1-10 CH<sub>2</sub>CH<sub>2</sub>O groups or 1-5 COCH<sub>2</sub>NH groups, a direct bond or one of the following structures

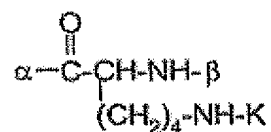
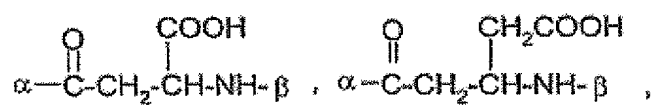
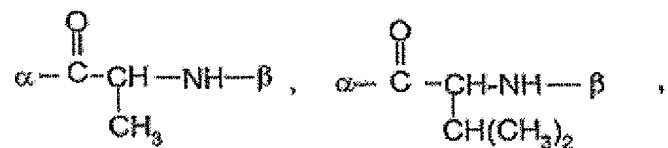
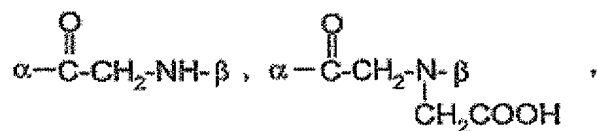


or

wherein

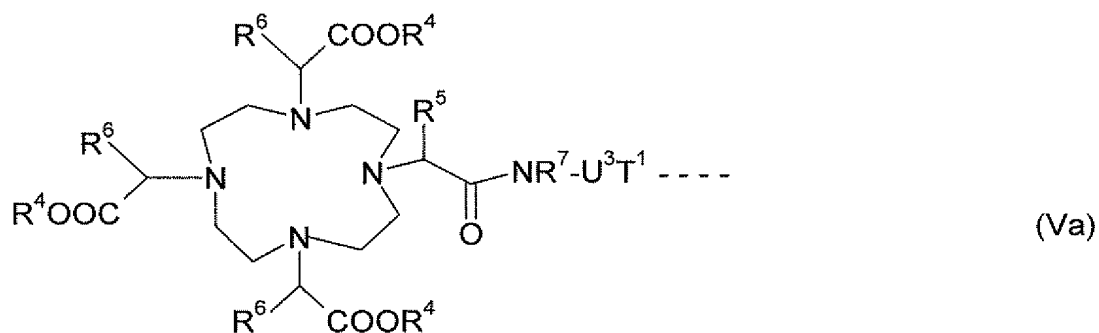
$\gamma$  binds to D, and  $\delta$  binds to R<sup>F</sup>.

Claim 15 (Currently Amended): A method according to claim 12, wherein in the compounds of general formula Ia, V is a molecule part with one of the following structures

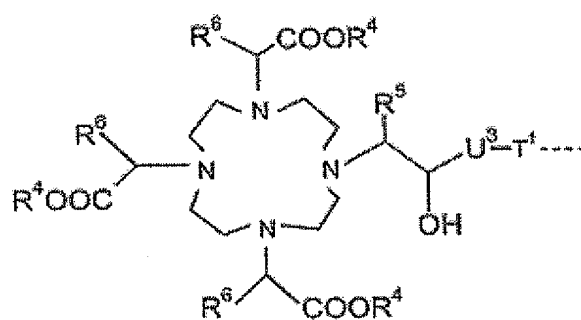


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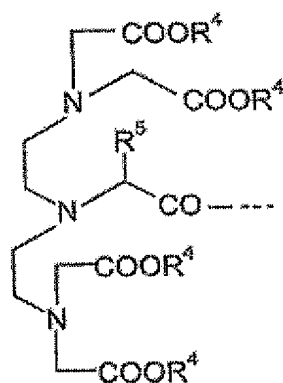
Claim 16 (Currently Amended): A method according to claim 12, wherein in the compounds of general formula Ia, K represents a complex of general formula Va, VIa, VIIa or VIIIa,





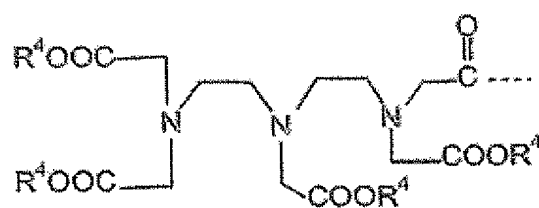


(VIa)



(VIIa)

or



(VIIIa)

wherein

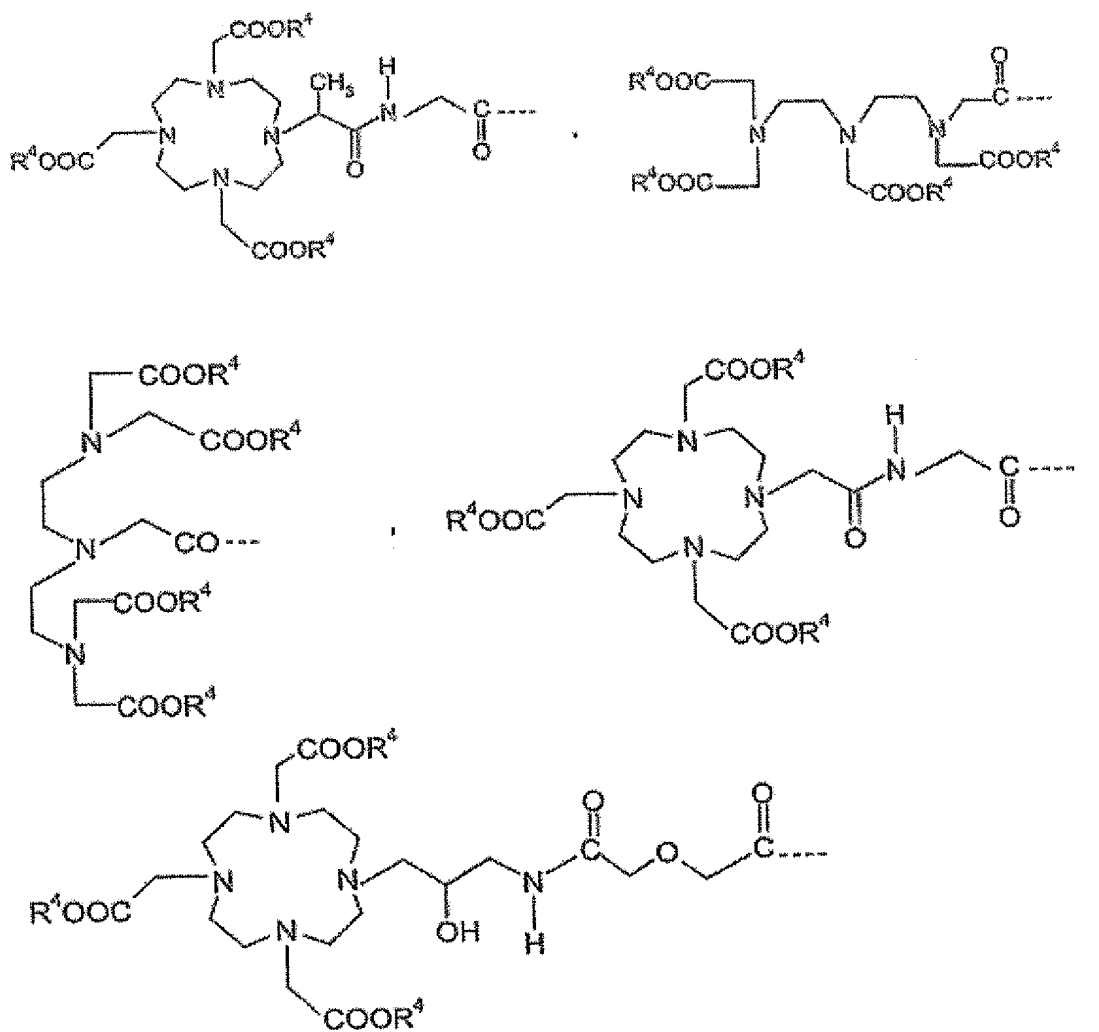
- $R^4$ , independently of one another, are a hydrogen atom or a metal ion equivalent of the elements of atomic numbers 23-29, 42-46 or 58-70,
- $R^5$  is a hydrogen atom or a straight-chain, branched, saturated or unsaturated  $C_1$ - $C_{30}$  alkyl chain, which optionally is substituted by 1-5 hydroxy, 1-3 carboxy or 1 phenyl group(s) and/or optionally is interrupted by 1-10 oxygen atoms, 1 phenylene group or 1 phenylenoxy group,
- $R^6$  is a hydrogen atom, a straight-chain or branched  $C_1$ - $C_7$  alkyl radical, a phenyl radical or benzyl radical,
- $R^7$  is a hydrogen atom, a methyl group or ethyl group, which optionally is substituted by a hydroxy group or carboxy group,
- $U^3$  is a straight-chain, branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkylene group optionally containing 1-5 imino groups, 1-3 phenylene groups, 1-3 phenylenoxy groups, 1-3 phenylenimino groups, 1-5 amide groups, 1-2 hydrazide groups, 1-5 carbonyl groups, 1-5 ethylenoxy groups, 1 urea group, 1 thiourea group, 1-2 carboxyalkylimino groups, 1-2 ester groups, 1-1-0 oxygen atoms, 1-5 sulfur atoms and/or 1-5 nitrogen atoms, and/or optionally substituted by 1-5 hydroxy groups, 1-2 mercapto groups, 1-5 oxo groups, 1-5 thioxo groups, 1-3 carboxy groups, 1-5 carboxyalkyl groups, 1-5 ester groups and/or 1-3 amino groups, wherein the optionally contained phenylene groups can be substituted by 1-2 carboxy groups, 1-2 sulfone groups or 1-2 hydroxy groups
- $T^1$  stands for a  $-CO-\beta$ ,  $-NHCO-\beta$  or  $-NHCS-\beta$  group, wherein  $\beta$  represents the binding site to V.

Claim 17 (Currently Amended): A method according to claim 16, wherein the  $C_1$ - $C_{20}$ -alkylene chain that stands or  $U^3$  contains the groups  $-CH_2NHCO-$ ,  $-NHCOCH_2O-$ ,  $-NHCOCH_2OC_6H_4-$ ,  $-N(CH_2CO_2H)-$ ,  $-CH_2OCH_2-$ ,  $-NHCOCH_2C_6H_4-$ ,  $-NHCSNHC_6H_4-$ , -

$\text{CH}_2\text{OC}_6\text{H}_4$ -, or  $-\text{CH}_2\text{CH}_2\text{O}-$  and/or is substituted by the groups  $-\text{COOH}$  or and  $-\text{CH}_2\text{COOH}$ .

Claim 18 (Previously Presented): A method according to claim 16, wherein  $\text{U}^3$  stands for a  $-\text{CH}_2-$ ,  $-\text{CH}_2\text{CH}_2-$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_2-$ ,  $-\text{C}_6\text{H}_4-$ ,  $-\text{C}_6\text{H}_{10}-$ ,  $-\text{CH}_2\text{C}_6\text{H}_4-$ ,  $-\text{CH}_2\text{NHCOCH}_2\text{CH}(\text{CH}_2\text{CO}_2\text{H})-\text{C}_6\text{H}_4-$ ,  $-\text{CH}_2\text{NHCOCH}_2\text{OCH}_2-$ , or  $-\text{CH}_2\text{NHCOCH}_2\text{C}_6\text{H}_4-$  group.

Claim 19 (Currently Amended): A method according to claim 12, wherein in the compounds of general formula Ia, K has one of the following structures:

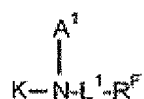


or

Claim 20 (Previously Presented): A method according to claim 12, wherein in the compounds of general formula Ia, the perfluoroalkyl chain  $R^F$  is  $-C_6F_{13}$ ,  $-C_8F_{17}$ ,  $-C_{10}F_{21}$  or  $-C_{12}F_{25}$ .

Claim 21 (Currently Amended): A method according to claim 12, wherein the gadolinium complex of 1,4,7-tris{1,4,7-tris(N-(carboxylatomethyl)-10-[N-1-methyl-3,6-diaza-2,5,8-trioxooctane-1,8-diyl])-1,4,7,10-tetraazacyclododecane, or Gd complex}-10-[N-2H,2H,4H,4H,5H,5H-3-oxa-perfluorotridecanoyl]-1,4,7,10-tetraazacyclododecane is administered.

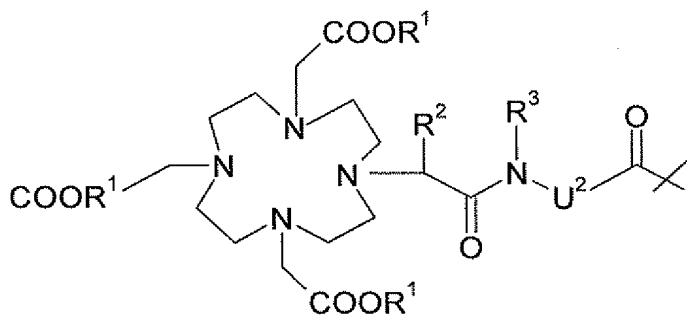
Claim 22 (Previously Presented): A method according to claim 1, wherein the perfluoroalkyl-containing metal complexes are of formula Ib



(Ib)

in which

K means a complexing agent or a metal complex of general formula IIb



(IIb)

wherein

R<sup>1</sup> stands for a hydrogen atom or a metal ion equivalent of atomic numbers 23-29, 42-46 or 58-70,

R<sup>2</sup> and R<sup>3</sup> stand for a hydrogen atom, a C<sub>1</sub>-C<sub>7</sub>-alkyl group, a benzyl group, a phenyl group, -CH<sub>2</sub>OH or -CH<sub>2</sub>-OCH<sub>3</sub>,

U<sup>2</sup> stands for radical L<sup>1</sup>, wherein L<sup>1</sup> and U<sup>2</sup>, independently of one another, can be the same or different, however,

A<sup>1</sup> means a hydrogen atom, a straight-chain or branched C<sub>1</sub>-C<sub>30</sub> alkyl group, which optionally is interrupted by 1-15 oxygen atoms, and/or optionally is substituted with 1-10 hydroxy groups, 1-2 COOH groups, a phenyl group, a benzyl group and/or 1-5 -OR<sup>9</sup> groups, with R<sup>9</sup> in the meaning of a hydrogen atom or a C<sub>1</sub>-C<sub>7</sub> alkyl radical, or -L<sup>1</sup>-R<sup>F</sup>,

L<sup>1</sup> means a straight-chain or branched C<sub>1</sub>-C<sub>30</sub>-alkylene group, which optionally is interrupted by 1-10 oxygen atoms, 1-5 -NH-CO groups, 1-5 -CO-NH groups, by a phenylene group optionally substituted by a COOH- group, 1-3 sulfur atoms, 1-2 -N(B<sup>1</sup>)-SO<sub>2</sub> groups and/or 1-2 -SO<sub>2</sub>-N(B<sup>1</sup>)-groups with B<sup>1</sup> in the meaning of A<sup>1</sup>, and/or optionally is substituted with radical R<sup>F</sup>, and

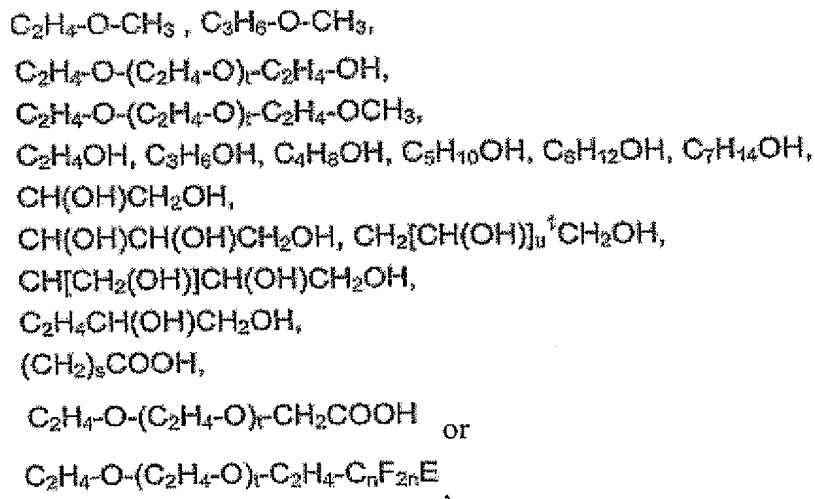
R<sup>F</sup> means a straight-chain or branched perfluorinated alkyl radical of formula C<sub>n</sub>F<sub>2n</sub>E, wherein n stands for numbers 4-30, and

E stands for a terminal fluorine atom, chlorine atom, bromine atom, iodine atom or a hydrogen atom,

and optionally present acid groups optionally can be present as salts of organic and/or inorganic bases or amino acids or amino acid amides.

Claim 23 (Previously Presented): A method according to claim 22, wherein in the compounds of general formula Ib, R<sup>2</sup>, R<sup>3</sup> and R<sup>9</sup>, independently of one another, mean hydrogen or a C<sub>1</sub>-C<sub>4</sub> alkyl group.

Claim 24 (Previously Presented): A method according to claim 22, wherein in the compounds of general formula Ib, A<sup>1</sup> means hydrogen, a C<sub>1</sub>-C<sub>15</sub> alkyl radical, or one of the radicals



wherein

s stands for integers 1 to 15,

t stands for integers 0 to 13,

u<sup>1</sup> stands for integers 1 to 10,

n stands for integers 4 to 20, and

E stands for hydrogen, fluorine, chlorine, bromine or iodine atoms,

or a branched isomer thereof.

Claim 25 (Currently Amended): A method according to claim 22, wherein in the compounds of general formula Ib, A<sup>1</sup> means hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, or one of the following

$C_2H_4-O-CH_3$ ,  $C_3H_8-O-CH_3$ ,  
 $C_2H_4-O-(C_2H_4-O)_x-C_2H_4-OH$ ,  $C_2H_4-O-(C_2H_4-O)_x-C_2H_4-OCH_3$ ,  
 $C_2H_4OH$ ,  $C_3H_8OH$ ,  
 $CH_2[CH(OH)]_yCH_2OH$ ,  
 $CH[CH_2(OH)]CH(OH)CH_2OH$ ,  
 $(CH_2)_wCOOH$ ,  
 $C_2H_4-O-(C_2H_4-O)_x-CH_2COOH$ ,  
or  $C_2H_4-O-(C_2H_4-O)_x-C_2H_4-C_nF_{2n}E$ ,

wherein

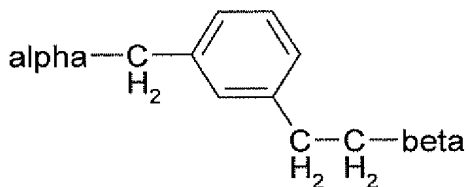
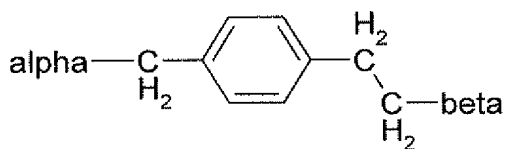
x stands for integers 0 to 5,  
 y stands for integers 1 to 6,  
 w stands for integers 1 to 10,  
 n stands for integers 4 to 15, and  
 E stands for a fluorine atom,

or a branched isomer thereof.

Claim 26 (Previously Presented): A method according to claim 22, wherein in the compounds of general formula Ib,  $L^1$  means one of the following

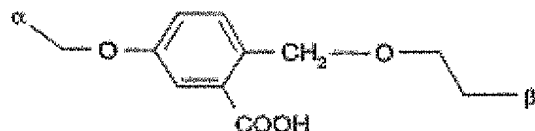
$\alpha\text{-(CH}_2)_8\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-CH}_2\text{-(O-CH}_2\text{-CH}_2\text{)}_y\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-(O-CH}_2\text{-CH}_2\text{)}_y\text{-}\beta$ ,  
 $\alpha\text{-CH}_2\text{-NH-CO-}\beta$   
 $\alpha\text{-CH}_2\text{-CH}_2\text{-NH-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(CH}_2\text{COOH)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(C}_{10}\text{H}_{21}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(C}_6\text{H}_{13}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-(CH}_2\text{)}_{10}\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-CH}_2\text{-OH)SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NHCO-(CH}_2\text{)}_{10}\text{-S-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{NHCOCH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-CH}_2\text{NHCOCH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-(CH}_2\text{-CH}_2\text{-O)}_t\text{-(CH}_2\text{)}_3\text{NHCO-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{NHCO(CH}_2\text{)}_{10}\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{CH}_2\text{NHCO(CH}_2\text{)}_{10}\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 ~~$\alpha\text{-CH}_2\text{-C}_6\text{H}_4\text{-O-CH}_2\text{CH}_2\text{-}\beta$ ,~~

wherein phenylene group 1,4 or 1,3 is linked





$\alpha\text{-CH}_2\text{-O-CH}_2\text{-C(CH}_2\text{-OCH}_2\text{CH}_2\text{-C}_6\text{F}_{13})_2\text{-CH}_2\text{-OCH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-NHCOCH}_2\text{CH}_2\text{CON-CH}_2\text{CH}_2\text{NHCOCH}_2\text{N(C}_2\text{H}_5\text{)SO}_2\text{C}_8\text{F}_{17}\beta$   
 $\alpha\text{-CH}_2\text{-CH}_2\text{NHCOCH}_2\text{N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-O-CH}_2\text{-CH(OC}_{10}\text{H}_{21}\text{)-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-(CH}_2\text{NHCO)}_4\text{-CH}_2\text{O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-(CH}_2\text{NHCO)}_3\text{-CH}_2\text{O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-OCH}_2\text{C(CH}_2\text{OH)}_2\text{-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$



$\alpha\text{-CH}_2\text{NHCOCH}_2\text{N(C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NHCO-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-NHCO-CH}_2\text{-O-CH}_2\text{CH}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(CH}_2\text{COOH)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(C}_{10}\text{H}_{21}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(C}_6\text{H}_{13}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-(CH}_2\text{)}_{10}\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-N(-CH}_2\text{-CH}_2\text{-OH)SO}_2\text{-}\beta$   
 $\alpha\text{-NH-CO-CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-O-C}_6\text{H}_4\text{-O-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-CH}_2\text{-C}_6\text{H}_4\text{-O-CH}_2\text{-CH}_2\text{-}\beta$   
 $\alpha\text{-N(C}_2\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_{10}\text{H}_{21}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_6\text{H}_{13}\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(C}_2\text{H}_4\text{OH)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(CH}_2\text{COOH)-SO}_2\text{-}\beta$   
 $\alpha\text{-N(CH}_2\text{C}_6\text{H}_5\text{)-SO}_2\text{-}\beta$   
 $\alpha\text{-N-[CH(CH}_2\text{OH)}_2\text{]-SO}_2\text{-}\beta$   
 $\alpha\text{-N-[CH(CH}_2\text{OH)CH(OH)(CH}_2\text{OH)]-SO}_2\text{-}\beta$

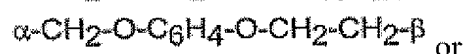
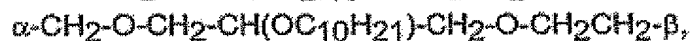
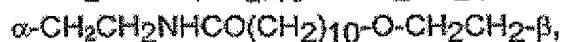
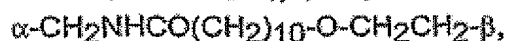
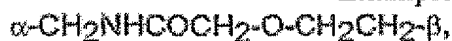
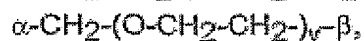
or

wherein

s stands for integers 1 to 15 and

y stands for integers 1 to 6.

Claim 27 (Currently Amended): A method according to claim 22, wherein in the compounds of general formula Ib, L<sup>1</sup> means one of the following



or

wherein

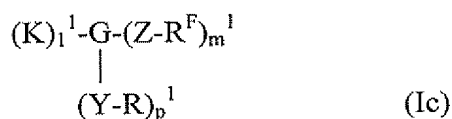
y stands for integers 1 to 6.

Claim 28 (Previously Presented): A method according to claim 22, wherein in the compounds of general formula Ib, R<sup>F</sup> means a straight-chain or branched perfluorinated alkyl radical of formula C<sub>n</sub>F<sub>2n</sub>E, wherein n stands for numbers 4 to 15 and E stands for a terminal fluorine atom.

Claim 29 (Currently Amended): A method according to claim 22, wherein one of the following complexes are administered:

- 1,4,7-Tris(carboxylatomethyl)-10-(3-aza-4-oxo-hexan-5-yl)-acid-(2,3-dihydroxypropyl)-N-(1H,1H,2H,2H,4H,4H,5H,5H-3-oxa)-perfluorotridecyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex
- 1,4,7-Tris(carboxylatomethyl)-10-[(3-aza-4-oxo-hexan-5-yl)-acid-N-(3,6,9,12,15-pentaoxa)-hexadecyl)-(1H,1H,2H,2H,4H,4H,5H,5H-3-oxa)-perfluorotridecyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex
- 1,4,7-Tris(carboxylatomethyl)-10-[(3-aza-4-oxo-hexan-5-yl)-acid-N-5-hydroxy-3-oxa-pentyl)-N-(1H,1H,2H,2H,4H,4H,5H,5H-3-oxa)-perfluorotridecyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex
- ~~1,4,7-Tris(carboxylatomethyl)-10-[(3-aza-4-oxo-hexan-5-yl)-acid-[N-3,6,9,15-tetraoxa-12-aza-15-oxo-C<sub>17</sub>-C<sub>26</sub>-hepta-decafluoro)hexacosyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex~~  
1,4,7-Tris(carboxylatomethyl)-10-[(3-aza-4-oxo-hexan-5-yl)-acid-[N-3,6,9,15-tetraoxa-12-aza-15-oxo-C<sub>17</sub>-C<sub>26</sub>-hepta-decafluoro)hexacosyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex or
- 1,4,7-Tris(carboxylatomethyl)-10-[(3-aza-4-oxo-hexan-5-yl)-acid-N-(2-methoxyethyl)-N-(1H,1H,2H,2H,4H,4H,5H,5H-3-oxa)-perfluorotridecyl]-amide]-1,4,7,10-tetraazacyclododecane, gadolinium complex.

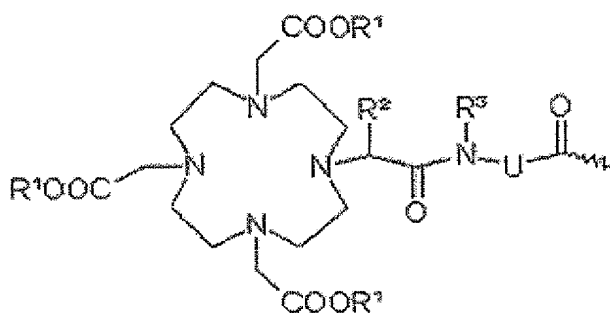
Claim 30 (Currently Amended): A method according to claim 1, wherein the perfluoroalkyl-containing metal complexes are of formula Ic



in which

R represents a mono-or oligosaccharide radical bonded by the 1-OH- or 1-SH-position,

- $R^F$  is a perfluorinated, straight-chain or branched carbon chain with the formula  $-C_nF_{2n}E$ , in which E represents a terminal fluorine, chlorine, bromine, iodine or hydrogen atom, and n stands for numbers 4-30,
- K stands for a metal complex of general formula IIc,



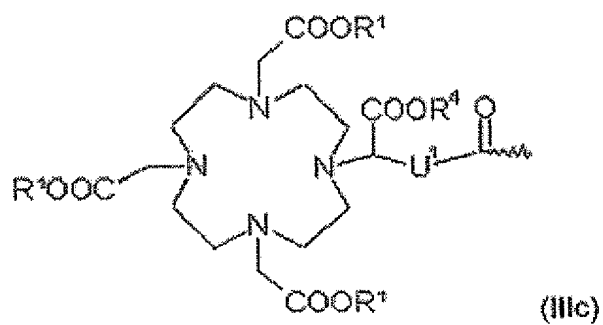
(IIc)

in which

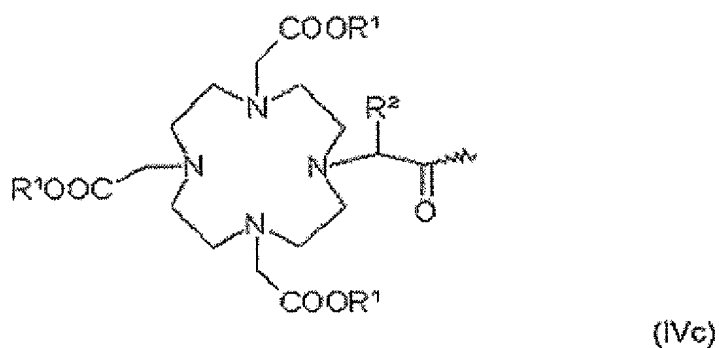
- $R^1$  means a hydrogen atom or a metal ion equivalent of atomic numbers 23-29, 42-46 or 58-70,  
provided that at least two  $R^1$  stand for metal ion equivalents,
- $R^2$  and  $R^3$ , independently of one another, represent hydrogen,  $C_1$ - $C_7$ -alkyl, benzyl, phenyl,  $-CH_2OH$  or  $-CH_2OCH_3$ , and
- U represents  $-C_6H_4-O-CH_2-\omega$ ,  $-(CH_2)_{1-5}-\omega$ , a phenylene group,  $-CH_2-NHCO-CH_2-CH(CH_2COOH)-C_6H_4-\omega$ ,  $-C_6H_4-(OCH_2CH_2)_{0-1}-N(CH_2COOH)-CH_2-\omega$ , or a  $C_1$ - $C_{12}$ -alkylene group or  $C_7$ - $C_{12}$ - $C_6H_4-O$  group optionally interrupted by one or more oxygen atoms, 1 to 3  $-NHCO$  groups or 1 to 3  $-CONH$  groups and/or substituted with 1 to 3  $-(CH_2)_{0-5}COOH$  groups, wherein  $\omega$  stands for the binding site to  $-CO-$ ,

or

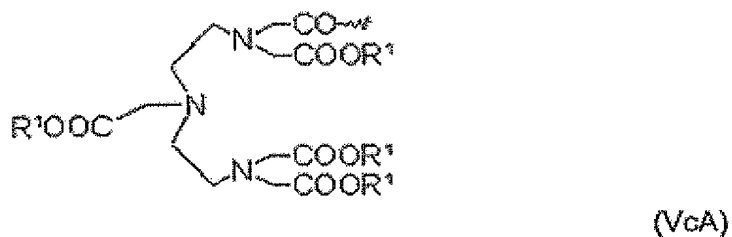
of general formula IIIc

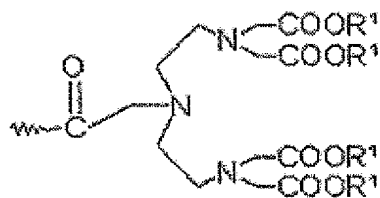


in which  $R^1$  has the above-mentioned meaning,  $R^4$  represents hydrogen or a metal ion equivalent mentioned under  $R^1$ , and  $U^1$  represents  $-C_6H_4-O-CH_2-\omega$ , wherein  $\omega$  means the binding site to  $-CO-$ ,  
or of general formula IVc



in which  $R^1$  and  $R^2$  have the above-mentioned meaning  
or of general formula VcA or VcB





(VcB)

in which R<sup>1</sup> has the above-mentioned meaning,

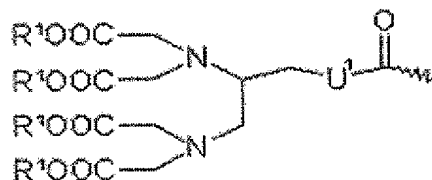
or of general formula VIc



(VIc)

in which R<sup>1</sup> has the above-mentioned meaning,

or of general formula VIIc

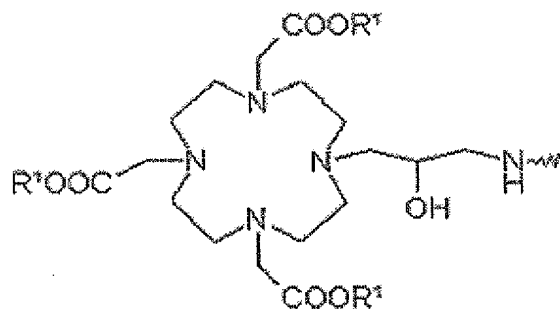


(VIIc)

in which R<sup>1</sup> has the above-mentioned meaning, and

U<sup>1</sup> represents -C<sub>6</sub>H<sub>4</sub>-O-CH<sub>2</sub>-ω, wherein ω means the binding site to -CO-

or of general formula VIIIc



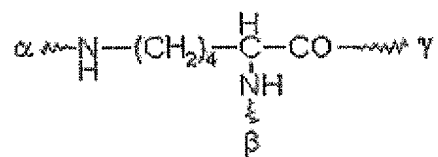
(VIIc)

in which  $R^1$  has the above-mentioned meaning,

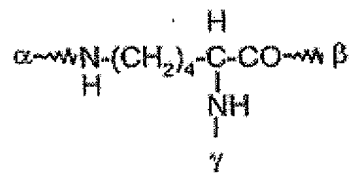
and in radical K, optionally present free acid groups optionally can be present as salts of organic and/or inorganic bases or amino acids or amino acid amides,

- G for the case that K means a metal complex of IIc to VIIc, represents a radical that is functionalized in at least three places and is selected from the following radicals a) to j)

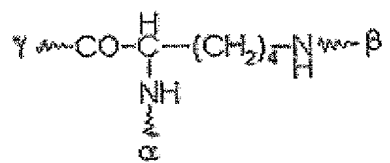
(a1)



(a2)

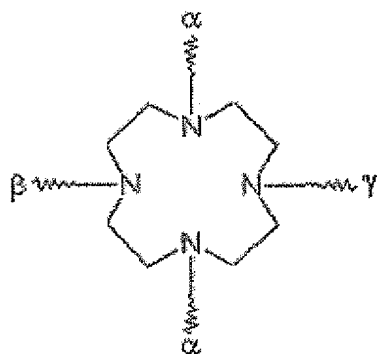


(b)

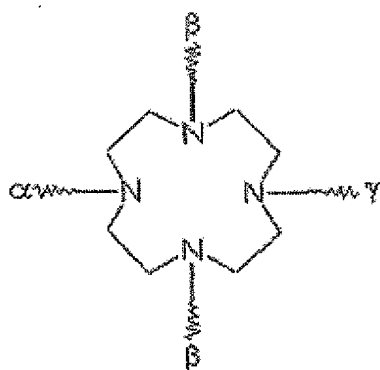




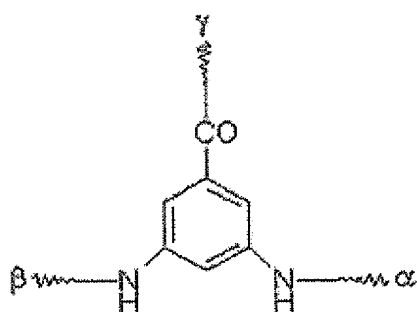
(c)



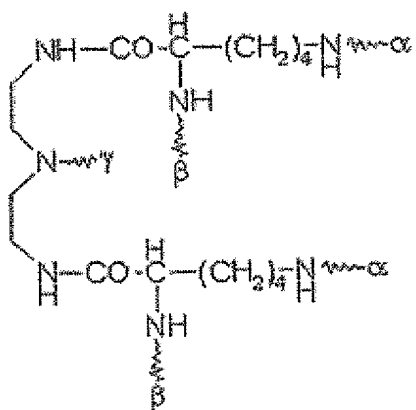
(d)



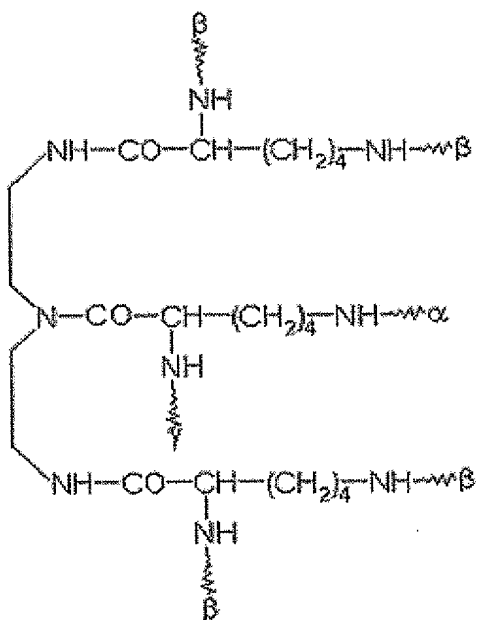
(e)



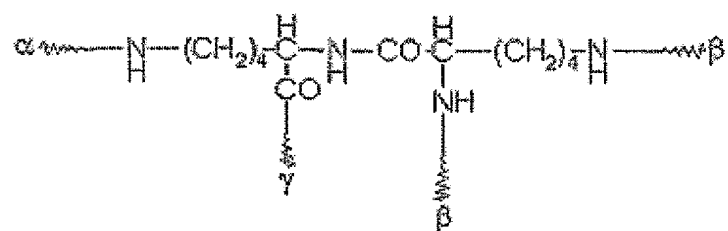
(f)



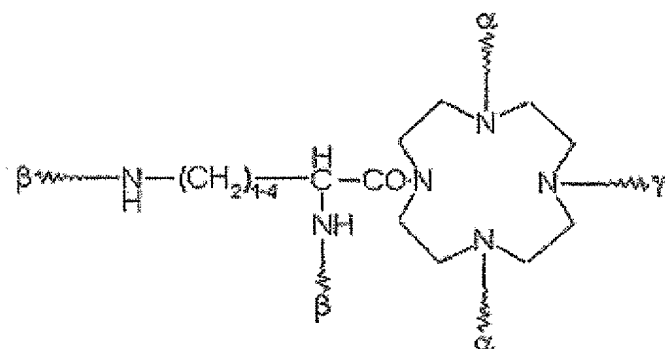
(g)



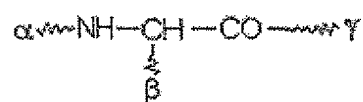
(h)



(i)



(j)

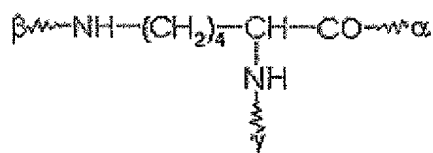


or

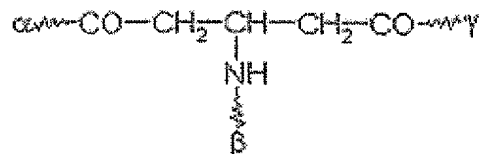
and

G for the case that K means a metal complex VIIIc, represents a radical that is functionalized in at least three places and is selected from k) or l),

(k)



(l)

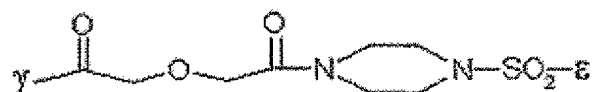


or

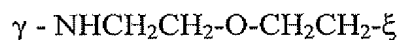
wherein  $\alpha$  means the binding site of G to complex K,  $\beta$  is the binding site of G to radical Y, and  $\gamma$  represents the binding site of G to radical Z,

Y means  $-\text{CH}_2$ ,  $\delta - (\text{CH}_2)_{(1-5)}\text{CO}-\beta$ ,  $\beta - (\text{CH}_2)_{(1-5)}\text{CO}-\delta$ ,  $\delta - \text{CH}_2 - \text{CHOH} - \text{CO}-\beta$  or  $\delta - \text{CH}(\text{CHOH} - \text{CH}_2\text{OH}) - \text{CHOH} - \text{CHOH} - \text{CO}-\beta$ , wherein  $\delta$  represents the binding site to sugar radical R and  $\beta$  is the binding site to radical G,

Z stands for



or



wherein  $\gamma$  represents the binding site of Z to radical G, and  $\xi$  means the binding site of Z to perfluorinated radical  $R^F$

and

$l^1, m^1$ , independently of one another, mean integers 1 or 2, and

$p^1$  means integers 1 to 4.

Claim 31 (Previously Presented): A method according to claim 30, wherein in the compounds of general formula Ic, R represents a monosaccharide radical with 5 to 6 C atoms or its deoxy compound or is glucose, mannose or galactose.

Claim 32 (Previously Presented): A method according to claim 30, wherein in the compounds of general formula Ic,  $R^2$  and  $R^3$ , independently of one another, mean hydrogen or  $C_1$ - $C_4$  alkyl and/or E in formula  $-C_nF_{2n}E$  means a fluorine atom.

Claim 33 (Previously Presented): A method according to claim 30, wherein in the compounds of general formula Ic, G represents lysine radical (a) or (b).

Claim 34 (Previously Presented): A method according to claim 30, wherein in the compounds of general formula Ic, Z means



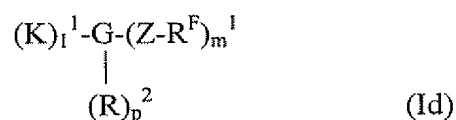
wherein  $\gamma$  represents the binding site of Z to radical G, and  $\xi$  means the binding site of Z to perfluorinated radical  $R^F$ , and/or Y means  $\delta$ - $CH_2CO\beta$ , wherein  $\delta$  represents the binding site to sugar radical R and  $\beta$  represents the binding site to radical G.

Claim 35 (Previously Presented): A method according to claim 30, wherein in the

compounds of general formula Ic, U in metal complex K represents -CH<sub>2</sub>- or -C<sub>6</sub>H<sub>4</sub>-O-CH<sub>2</sub>-ω, wherein ω stands for the binding site to -CO-.

Claim 36 (Previously Presented): A method according to claim 30, wherein the gadolinium complex of 6-N-[1,4,7-tris(carboxylatomethyl)-1,4,7,10-tetraazacyclododecane-10-N-(pentanoyl-3-aza-4-oxo-5-methyl-5-yl)]-2-N-[1-O-α-D-carbonylmethyl-mannopyranose]-L-lysine-[1-(4-perfluorooctylsulfonyl)-piperazine]-amide is administered.

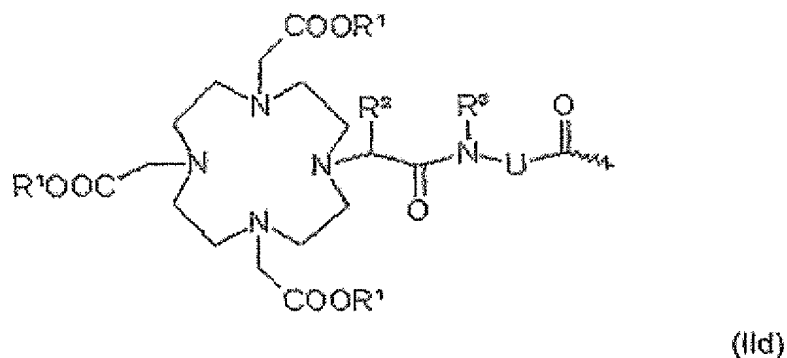
Claim 37 (Currently Amended): A method according to claim 1, wherein the perfluoroalkyl-containing metal complexes are of formula Id



in which

R<sup>F</sup> is a perfluorinated, straight-chain or branched carbon chain with formula -C<sub>n</sub>F<sub>2n</sub>E, in which E represents a terminal fluorine, chlorine, bromine, iodine or hydrogen atom, and n stands for numbers 4-30,

K stands for a metal complex of general formula IIId,



in which

$R^1$  means a hydrogen atom or a metal ion equivalent of atomic numbers 23-29, 42-46 or 58-70,

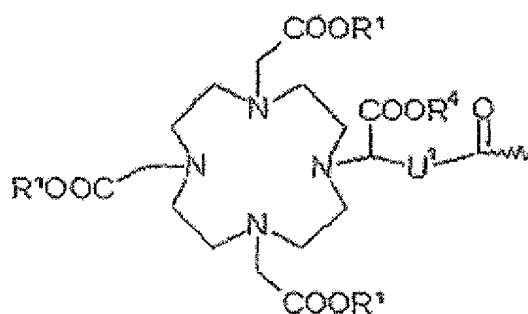
provided that at least two  $R^1$  stand for metal ion equivalents,

$R^2$  and  $R^3$ , independently of one another, represent hydrogen,  $C_1$ - $C_7$  alkyl, benzyl, phenyl,  $-CH_2OH$  or  $-CH_2OCH_3$ , and

U represents  $-C_6H_4-O-CH_2-\omega$ -,  $-(CH_2)_{1-5}-\omega$ , a phenylene group,  $-CH_2-NHCO-CH_2-CH(CH_2COOH)-C_6H_4-\omega$ -,  $-C_6H_4-(OCH_2CH_2)_{0-1}-N(CH_2COOH)-CH_2-\omega$ , or a  $C_1$ - $C_{12}$  alkylene group or  $C_7$ - $C_{12}$ - $C_6H_4-O$  group optionally interrupted by one or more oxygen atoms, 1 to 3  $-NHCO$  groups, 1 to 3  $-CONH$  groups and/or substituted with 1 to 3  $-(CH_2)_{0-5}COOH$  groups, wherein  $\omega$  stands for the binding site to  $-CO-$ ,

or

of general formula III d

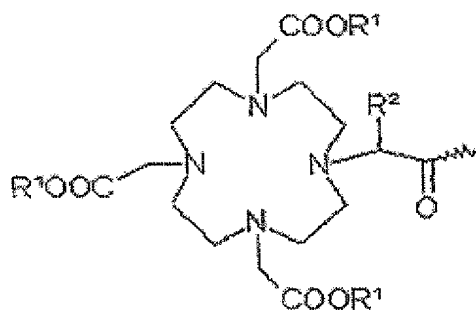


(III d)

in which  $R^1$  has the above-mentioned meaning,  $R^4$  represents hydrogen or a metal ion equivalent mentioned under  $R^1$ , and  $U^1$  represents  $-C_6H_4-O-CH_2-\omega$ -, wherein  $\omega$  means the binding site to  $-CO-$ ,

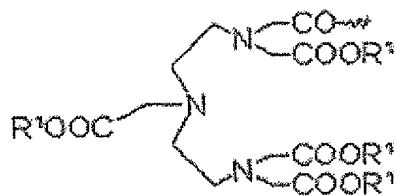
or

of general formula IV d

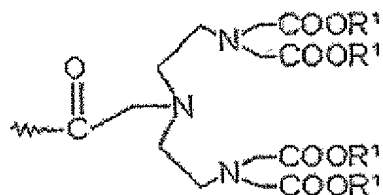


(IVd)

in which  $\text{R}^1$  and  $\text{R}^2$  have the above-mentioned meaning,  
or of general formula VdA or VdB



(VdA)



(VdB)

or

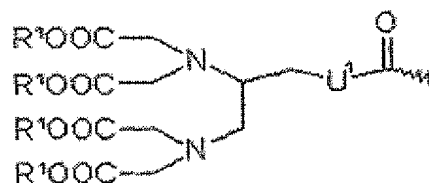
in which  $\text{R}^1$  has the above-mentioned meaning,  
or of general formula VId





(VIId)

in which  $R^1$  has the above-mentioned meaning,  
or of general formula VIId



(VIId)

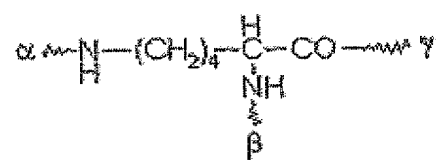
in which  $R^1$  has the above-mentioned meaning, and

$U^1$  represents  $-C_6H_4-O-CH_2-\omega-$ , wherein  $\omega$  means the binding site to  $-CO-$ ,

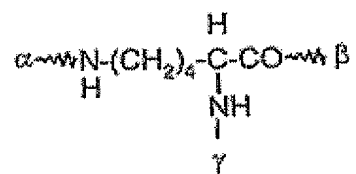
and in radical K, optionally present free acid groups optionally can be present as salts of organic and/or inorganic bases or amino acids or amino acid amides,

G represents a radical that is functionalized in at least three places and is selected from the following radicals a) to g)

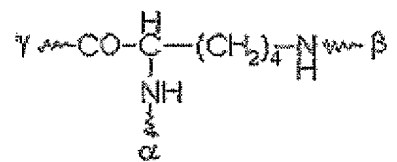
(a1)



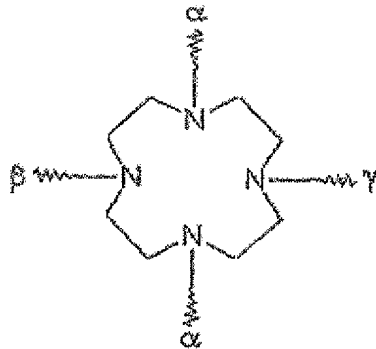
(a2)



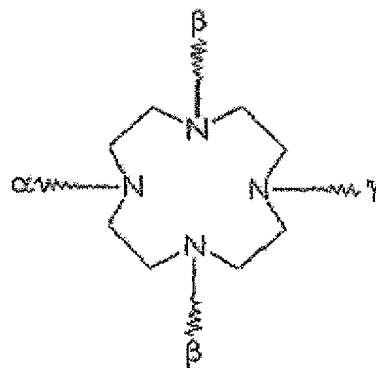
(b)



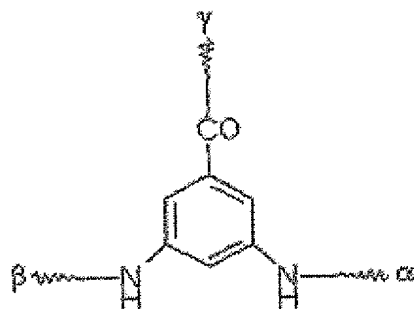
(c)



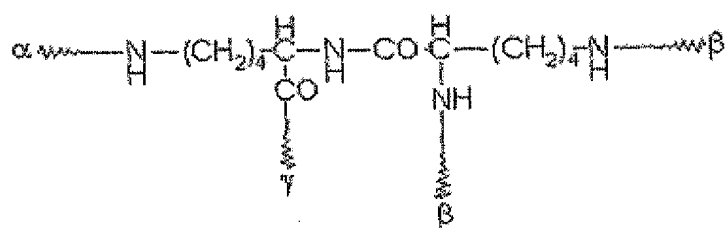
(d)



(e)



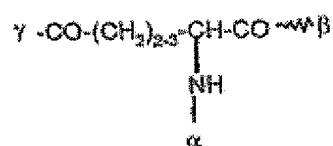
(f)



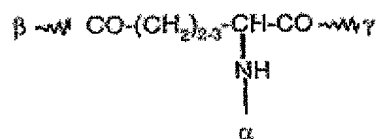
(g)



(h)



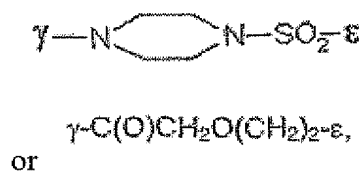
(i)



or

wherein  $\alpha$  means the binding site of G to complex K,  $\beta$  is the binding site of G to radical R, and  $\gamma$  represents the binding site of G to radical Z

Z stands for



wherein  $\gamma$  represents the binding site of Z to radical G and  $\xi$  means the binding site of Z to perfluorinated radical  $\text{R}_f$ ,

R represents a polar radical that is selected from complexes K of general formulas IIId to VIIId, wherein  $\text{R}^1$  here means a hydrogen atom or a metal ion equivalent of atomic numbers 20, 23-29, 42-46 or 58-70,

and radicals  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , U and  $\text{U}^1$  have the above-indicated meaning,

or

means the folic acid radical

or

means a carbon chain with 2-30 C atoms that is bonded to radical G via -CO- or

$\text{SO}_2$ - or a direct bond to radical G, and is straight or branched, saturated or

unsaturated, optionally interrupted by 1-10 oxygen atoms, 1-5 -NHCO groups, 1-5

-CONH groups, 1-2 sulfur atoms, 1-5 -NH groups or 1-2 phenylene groups, which

optionally can be substituted with 1-2 OH groups, 1-2  $\text{NH}_2$  groups, 1-2

-COOH groups, or 1-2  $\text{-SO}_3\text{H}$  groups,

or

optionally substituted with 1-8 OH groups, 1-5 -COOH groups, 1-2  $\text{SO}_3\text{H}$  groups,

1-5  $\text{NH}_2$  groups, or 1-5  $\text{C}_1\text{-C}_4$  alkoxy groups, and

$l^1$ ,  $m^1$ ,  $p^2$ , independently of one another, mean integers 1 or 2.

Claim 38 (Previously Presented): A method according to claim 37, wherein in the compounds of general formula Id, K stands for a metal complex of general formula IIId, IIIId, VdB or VIIId.

Claim 39 (Previously Presented): A method according to claim 37, wherein in the compounds of general formula Id, polar radical R has the meaning of complex K.

Claim 40 (Currently Amended): A method according to claim 37, wherein in the compounds of general formula Id, polar radical R has one of the following meanings:

$\text{-C(O)CH}_2\text{CH}_2\text{SO}_3\text{H}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH(OH)CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{NH-C(O)CH}_2\text{COOH}$   
 $\text{-C(O)CH}_2\text{CH(OH)CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{COOH}$   
 $\text{-SO}_2\text{CH}_2\text{CH}_2\text{COOH}$   
 $\text{-C(O)-C}_6\text{H}_3\text{-(m-COOH)}_2$   
 $\text{-C(O)CH}_2\text{O(CH}_2)_2\text{-C}_6\text{H}_3\text{-(m-COOH)}_2$   
 $\text{-C(O)CH}_2\text{O-C}_6\text{H}_4\text{-m-SO}_3\text{H}$   
 $\text{-C(O)CH}_2\text{NHC(O)CH}_2\text{NHC(O)CH}_2\text{OCH}_2\text{COOH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH}_2\text{OCH}_2\text{COOH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH(OH)CH}_2\text{O-CH}_2\text{CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{OCH}_2\text{CH(OH)CH}_2\text{OCH}_2\text{-CH(OH)-CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{SO}_3\text{H}$   
 $\text{-C(O)CH}_2\text{CH}_2\text{COOH}$   
 $\text{-C(O)CH(OH)CH(OH)CH}_2\text{OH}$   
 $\text{-C(O)CH}_2\text{O}[(\text{CH}_2)_2\text{O}]_{1-9}\text{-CH}_3$   
 $\text{-C(O)CH}_2\text{O}[(\text{CH}_2)_2\text{O}]_{1-9}\text{-H}$   
 $\text{-C(O)CH}_2\text{OCH(CH}_2\text{OH)}_2$   
 $\text{-C(O)CH}_2\text{OCH(CH}_2\text{OCH}_2\text{COOH)}_2$   
 $\text{-C(O)-C}_6\text{H}_3\text{-(m-OCH}_2\text{COOH)}_2$

$\text{-CO-CH}_2\text{O-(CH}_2)_2\text{O(CH}_2)_2\text{O-(CH}_2)_2\text{O(CH}_2)_2\text{OCH}_3$   
or  $\text{-C(O)CH}_2\text{O}[(\text{CH}_2)_2\text{O}]_4\text{-CH}_3$

Claim 41 (Previously Presented): A method according to claim 37, wherein in the compounds of general formula Id, polar radical R is the folic acid radical.

Claim 42 (Previously Presented): A method according to claim 37, wherein in the compounds of general formula Id, G represents lysine radical (a) or (b).

Claim 43 (Previously Presented): A method according to claim 37, wherein in the compounds of general formula Id, U represents group -CH<sub>2</sub>- or -C<sub>6</sub>H<sub>4</sub>-O-CH<sub>2</sub>-ω in metal complex K, wherein ω stands for the binding site to -CO-.

Claim 44 (Previously Presented): A method according to claim 37, wherein the gadolinium complex of 2,6-N,N'-bis[1,4,7-tris(carboxylatomethyl)-1,4,7,10-tetraazacyclododecane-10-(pentanoyl-3-aza-4-oxo-5-methyl-5-yl)]-lysine-[1-(4-perfluorooctylsulfonyl-piperazine)]-amide is administered.

Claim 45 (Previously Presented): A method according to claim 12, wherein the perfluoroalkyl-containing metal complexes are galenical formulations that contain paramagnetic, perfluoroalkyl-containing metal complexes of general formula Ia and diamagnetic perfluoroalkyl-containing substances, optionally dissolved in an aqueous solvent.

Claim 46 (Previously Presented): A method according to claim 45, wherein the diamagnetic perfluoroalkyl-containing substances are of formula XX



in which R<sup>F</sup> represents a straight-chain or branched perfluoroalkyl radical with 4 to 30 carbon atoms, L<sup>2</sup> stands for a linker and B<sup>2</sup> stands for a hydrophilic group.

Claim 47 (Previously Presented): A method according to claim 46, wherein linker L<sup>2</sup> is a

direct bond, an -SO<sub>2</sub> group, or a straight-chain or branched carbon chain with up to 20 carbon atoms, which can be substituted with one or more -OH, -COO-, or -SO<sub>3</sub> groups and/or optionally contains one or more -O-, -S-, -CO-, -CONH-, -NHCO-, -CONR<sup>9</sup>-, -NR<sup>9</sup>CO-, -SO<sub>2</sub>-, -PO<sub>4</sub><sup>-</sup>-, -NH- or -NR<sup>9</sup> groups, an aryl ring or a piperazine, wherein R<sup>9</sup> stands for a C<sub>1</sub>-to C<sub>20</sub>-alkyl radical, which in turn can contain one or more O atoms, and/or can be substituted with -COO<sup>-</sup> or SO<sub>3</sub> groups.

Claim 48 (Previously Presented): A method according to claim 46, wherein hydrophilic group B<sup>2</sup> is a mono- or disaccharide, one or more adjacent -COO<sup>-</sup> or -SO<sub>3</sub> groups, a dicarboxylic acid, an isophthalic acid, a picolinic acid, a benzenesulfonic acid, a tetrahydropyrandicarboxylic acid, a 2,6-pyridinedicarboxylic acid, a quaternary ammonium ion, an aminopolycarboxylic acid, an aminodipolyethylene glycolsulfonic acid, an aminopolyethylene glycol group, an SO<sub>2</sub>-(CH<sub>2</sub>)<sub>2</sub>-OH group, a polyhydroxyalkyl chain with at least two hydroxyl groups or one or more polyethylene glycol chains with at least two glycol units, wherein the polyethylene glycol chains are terminated by an -OH or -OCH<sub>3</sub> group.

Claim 49 (Previously Presented): A method according to claim 45, wherein the diamagnetic perfluoroalkyl-containing substances are conjugates that consist of α-, β- or γ-cyclodextrin or compounds of general formula XXII



in which A<sup>2</sup> stands for an adamantane, biphenyl or anthracene molecule, L<sup>3</sup> stands for a linker, and R<sup>F</sup> stands for a straight-chain or branched perfluoroalkyl radical with 4 to 30 carbon atoms, and wherein linker L<sup>3</sup> is a straight-chain hydrocarbon chain with 1 to 20 carbon atoms, which can be interrupted by one or more oxygen atoms, one or more CO-, SO<sub>2</sub>-, CONH-, NHCO-, CONR<sup>10</sup>-, NR<sup>10</sup>CO-, NH- or NR<sup>10</sup> groups or a piperazine, wherein R<sup>10</sup> is a C<sub>1</sub>-C<sub>5</sub> alkyl radical.

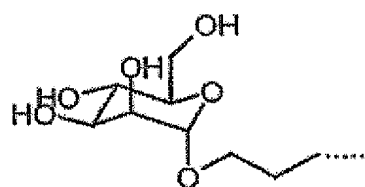
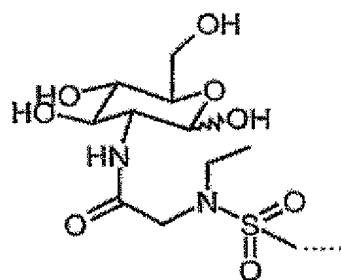
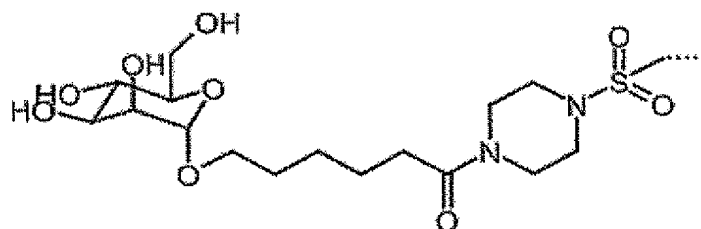
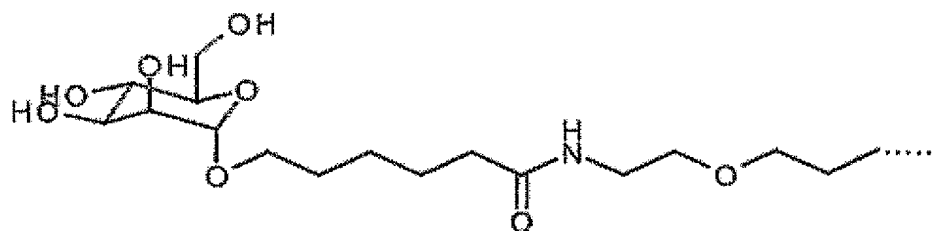
Claim 50 (Previously Presented): A method according to claim 45, wherein the

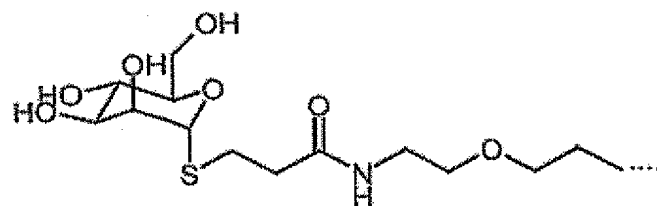
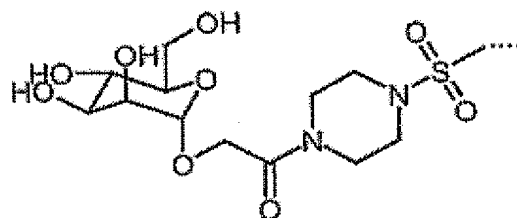
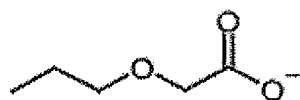
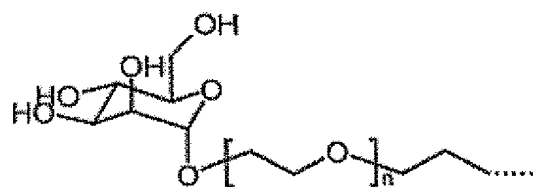
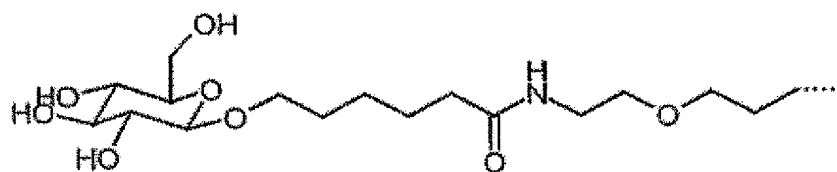
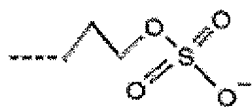


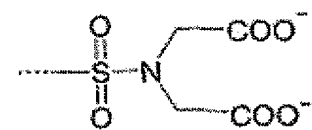
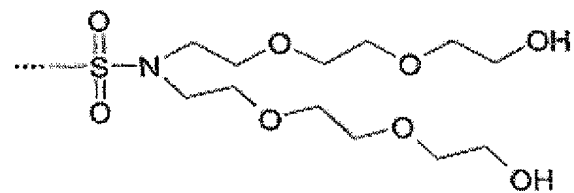
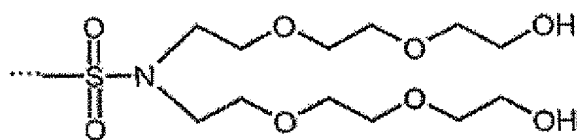
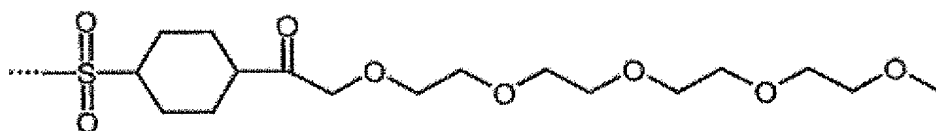
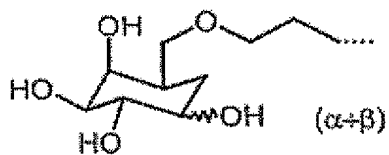
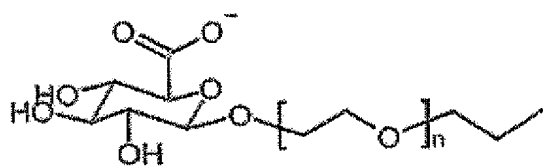
diamagnetic perfluoroalkyl-containing substances are of formula XXI:

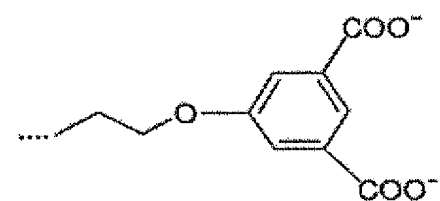
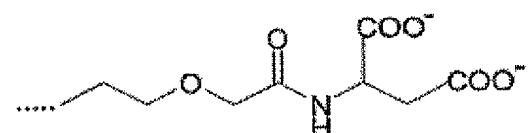
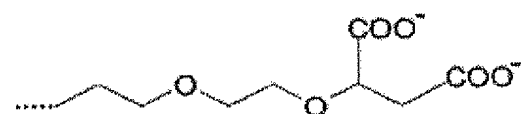
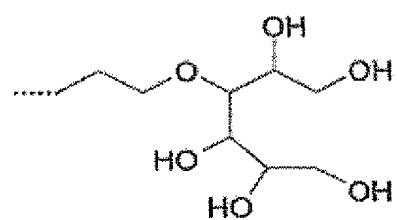
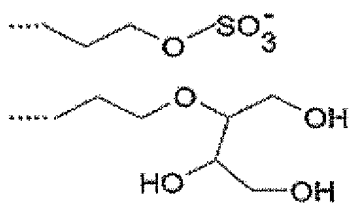
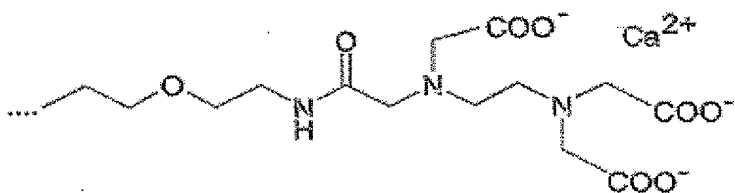


in which  $R^F$  represents a straight-chain or branched perfluoroalkyl radical with 4 to 30 carbon atoms, and  $X^1$  is a radical that is selected from the group of the following radicals, wherein n is a number between 1 and 10:









or